

**WHAT IS CLAIMED IS:**

1. A method for creating a message endpoint on a device in a distributed computing environment, the method comprising:

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receiving an address for a service within the distributed computing environment;

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linking said address to a pre-generated message interface for accessing said service, wherein said message interface comprises computer-executable code built in to said device, and wherein said linking creates a message endpoint for said device to send messages to said service at said address in order to access said service;

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using said message endpoint to send messages to said address to access said service.

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2. The method as recited in claim 1, further comprising said message interface of said message endpoint verifying that said messages sent to said service comply with a message schema for said service.

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3. The method as recited in claim 2, wherein said message schema defines messages to be sent to and received from said service, wherein said messages are defined in a data representation language.

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4. The method as recited in claim 3, wherein said data representation language is eXtensible Markup Language.

5. The method as recited in claim 1, further comprising:

receiving an authentication credential indicating authorization to access said service; and

5 wherein said linking comprises linking said authentication credential to said pre-generated message interface, wherein said message endpoint is configured to include said authentication credential with each message sent to said address.

6. The method as recited in claim 5, further comprising:

10 locating a service advertisement for said service, wherein said service advertisement indicates an authentication service; and

15 requesting said authentication credential from said authentication service to access said service; and

wherein said receiving an authentication credential comprises receiving said authentication credential from said authentication service.

20 7. The method as recited in claim 1, further comprising:

locating a service advertisement for said service, wherein said service advertisement comprises said address for said service and indicates a message schema for said service;

25 wherein said receiving an address comprises receiving said address from said service advertisement; and

30 wherein said linking comprises verifying that said pre-generated message interface corresponds to said message schema.

8. A method for pre-generating at least one message interface to be built-in to a device in order to access a service, the method comprising:

5 receiving a schema defining messages for accessing the service;

generating message endpoint code according to said schema;

linking said message endpoint code into executable operating code for the device  
10 and loading the message endpoint code and operating code onto the device.

9. The method as recited in claim 8, wherein said message endpoint is configured to verify that said messages sent from the device to the service comply with  
15 said schema.

10. The method as recited in claim 9, wherein said schema defines messages to be sent to and received from the service, wherein said messages are defined in a data representation language.

20 11. The method as recited in claim 10, wherein said data representation language is eXtensible Markup Language.

12. The method as recited in claim 8, wherein said generating comprises  
25 generating Java source code for said message endpoint and compiling said Java source code into bytecode.

13. The method as recited in claim 8, further comprising repeating said receiving, said generating, and said linking for one or more additional schema  
30 corresponding to additional services.

14. A device in a distributed computing environment, comprising:

a pre-generated message interface for accessing a service, wherein said message  
5 interface comprises computer-executable code built in to said device;

a message endpoint constructor configured to receive an address for the service  
and link said address to said pre-generated message interface to create a  
message endpoint for the device to send messages to the service at said  
10 address in order to access said service;

wherein said device is configured to use said message endpoint to send messages  
to said address to access said service.

15. The device as recited in claim 14, wherein said pre-generated message  
interface is configured to verify that messages sent from said message endpoint comply  
with a message schema for said service.

16. The device as recited in claim 15, wherein said message schema defines  
20 messages to be sent to and received from said service, wherein said messages are defined  
in a data representation language.

17. The device as recited in claim 16, wherein said data representation  
language is eXtensible Markup Language.

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18. The device as recited in claim 14, wherein said message endpoint  
constructor is further configured to:

receive an authentication credential indicating authorization to access said service;  
30 and

link said authentication credential to said pre-generated message interface, wherein said message endpoint is configured to include said authentication credential with each message sent to said address.

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19. The device as recited in claim 18, wherein the device is configured to locate a service advertisement for said service, wherein said service advertisement indicates an authentication service; and wherein said message endpoint constructor is configured to request an authentication credential from said authentication service to access said service and receive said authentication credential from said authentication service.

15 20. The device as recited in claim 14, wherein the device is configured to locate a service advertisement for the service, wherein said service advertisement comprises said address for said service and indicates a message schema for said service; and wherein said message endpoint constructor is configured to receive said address from said service advertisement, and verify that said pre-generated message interface corresponds to said message schema.

20 21. A tool for pre-generating at least one message interface to be built-in to a device in order to access a service, the tool comprising:

a schema parser configured to receive a schema defining messages for accessing the service;

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a message interface source code generator configured to generate message interface source code according to said schema as parsed by said schema parser; and

a message interface code compiler configured to compile said message interface source code into message interface executable code as part an operating code package built-in to said device.

5           22. The tool as recited in claim 21, wherein said message endpoint is configured to verify that said messages sent from the device to the service comply with said schema.

10          23. The tool as recited in claim 22, wherein said schema defines messages to be sent to and received from the service, wherein said messages are defined in a data representation language.

15          24. The tool as recited in claim 23, wherein said data representation language is eXtensible Markup Language.

25          25. The tool as recited in claim 21, wherein said message interface source code generator is configured to generate Java source code for said message interface.

20          26. The tool as recited in claim 25, wherein said message interface code compiler is configured to compile said Java source code into bytecode executable in a Java virtual machine on said device.

25          27. A carrier medium comprising program instructions, wherein the program instructions are computer-executable on a device to implement:

receiving an address for a service within a distributed computing environment;

30          linking said address to a pre-generated message interface for accessing said service, wherein said message interface comprises computer-executable code built in to said device, and wherein said linking creates a message

endpoint for said device to send messages to said service at said address in order to access said service;

using said message endpoint to send messages to said address to access said  
5 service.

28. A carrier medium comprising program instructions, wherein the program instructions are computer-executable to implement:

10 receiving a schema defining messages for accessing a service;

generating message endpoint code according to said schema;

15 linking said message endpoint code into executable operating code for the device and loading the message endpoint code and operating code onto the device.